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TECHNIQUES FOR SELECTING AND PRESENTING OCCUPATIONAL INFORMATION TO HIGH SCHOOL STUDENTS. PLANNING AND DEVELOPMENT OF RESEARCH PROGRAMS IN SELECTED AREAS OF VOCATIONAL EDUCATION, VOLUME I.

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AS AN INITIAL STEP TOWARD IMPROVEMENT IN SELECTING AND DEVELOPING TYPES OF OCCUPATIONAL INFORMATION NEEDED BY HIGH SCHOOL STUDENTS, AS WELL AS IMPROVEMENT OF THE FORMAT BY WHICH SUCH INFORMATION IS PRESENTED, AN EXPERIMENTAL DRAFT OF OCCUPATIONAL INFORMATION MATERIALS WAS PREPARED AND EVALUATED. THESE PILOT MATERIALS WERE DESIGNED FOR USE IN CAREER PLANNING FOR ONE PARTICULAR JOB FAMILY, THE SECRETARIAL VOCATIONS. THREE BOOKLETS WERE PREPARED, ENTITLED "WOMEN'S PLACE IN TODAY'S WORLD OF WORK," "ENTRY JOBS LEADING TO THE POSITION OF SECRETARY," AND "WHAT IT'S LIKE TO BE A SECRETARY." IN ADDITION, THESE BOOKLETS CORRESPONDED RESPECTIVELY TO STUDENT NEEDS AT THREE DIFFERENT STAGES OF INDIVIDUAL DEVELOPMENT--(1) THE NEED TO REALISTICALLY PERCEIVE THE PLACE OF BOTH SEXES IN RELATION TO THE WORKING WORLD, (2) THE NEED FOR AWARENESS OF THE WIDE RANGE OF JOB FAMILIES WHICH ONE MIGHT ENTER, AND (3) THE NEED TO SELECT A SPECIFIC EDUCATIONAL OR TRAINING PROGRAM FOR A PARTICULAR ENTRY JOB IN WHICH ONE IS INTERESTED. AFTER A BRIEF TRYOUT OF THE MATERIALS (INTERVIEWING AND TESTING SELECTED STUDENTS), THE BOOKLETS WERE REVISED TO IMPROVE THEIR FORMAT OF PRESENTATION. ADDITIONAL RESEARCH WAS RECOMMENDED FOR IDENTIFYING IMPROVED CONTENT AND TECHNIQUES TO BE USED IN PRESENTING SIMILAR OCCUPATIONAL INFORMATION ABOUT OTHER JOBS OR OTHER JOB FAMILIES. RELATED REPORTS ARE ED 010 623 THROUGH ED 010 626. (JH)

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FINAL REPORT

Project No. 5-0047
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PLANNING AND DEVELOPMENT OF RESEARCH PROGRAMS IN SELECTED AREAS OF VOCATIONAL EDUCATION: VOLUME I,

TECHNIQUES FOR SELECTING AND PRESENTING OCCUPATIONAL INFORMATION TO HIGH SCHOOL STUDENTS

30 November 1966

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Planning and Development of Research Programs in Selected Areas of Vocational Education: Volume I, Techniques for Selecting and Presenting Occupational Information to High School Students

Project No. 5-0047
Contract No. OE-5-85-106

Leslie J. Briggs and Eleanor L. Norris

30 November 1966
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American Institutes for Research
Palo Alto, California

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Preface

The title of this completed project is "Planning and Development of Research Programs in Selected Areas of Vocational Education." As this title implies, this contract period was intended to consist of exploratory research into several phases of vocational education with the plan that a follow-on stage of work could take one of two possible directions: (a) the research begun during this contract period might be developed further and carried on under a research and development center which might be established, or (b) the research might lead to definition of the next best steps which could be taken on one or more of the selected areas of vocational education in which work was done.

Since the project had this general exploratory orientation, it appeared reasonable to permit several of the more senior personnel assigned to the project to exercise considerable freedom in the directions in which they individually would like to do exploratory work within the boundaries contemplated by the contract. Accordingly, work was undertaken in three distinct areas or aspects of vocational education, and the results of this initial contract period are being communicated in this final report consisting of three volumes plus an appendix to Volume III.

As reported in this Volume I of the final report, effort was directed toward improving techniques for selecting and presenting occupational information to high school students. The main effort in this area has been to identify new kinds of content for occupational information which would emphasize some of the intangible day-to-day aspects of working in a job. Another objective in this research activity was to consider improved ways and formats in which such occupational information could be presented. It was decided that a printed format would be used for the exploratory work, and that in a planned follow-on project increasing emphasis would be given to audiovisual methods of presenting occupational information. The rationale, procedure, and progress made in the area of occupational information is reported in this Volume I.

The second research area investigated is reported in Volume II of this final report under the sub-title "Source Data on Perceptions of Parents and Children Regarding Career Planning." The data presented in Volume II are derived from a questionnaire which was administered to children at various grade levels and to their parents. The purpose was to study the impact of parental attitudes and behavior upon the career planning activities children engage in, as

these parental influences are perceived by the children and by their parents. A major portion of the questionnaire data reported in Volume II pertains to the extent to which the perceptions of children and their parents are in agreement with respect to where the child is at the present time in his own planning, what influences led him to be in his present stage of planning, and influences which appear to affect the attitudes and specific plans of the children. Some of the data in Volume II also are addressed to the question of how children's attitudes, perceptions, and plans change with age level. This latter type of information, as derived from the questionnaire given to the children, became the basis for activities reported in Volume III, and this aspect of the data thus received less emphasis in Volume II than was given to data from the parent form of the questionnaire.

In Volume III a rationale and approach are reported by which the data from the questionnaire administered to children were used as curriculum material designed for children in grades 7 to 9. Since these questionnaire data present a developmental picture of how certain attitudes, beliefs, and plans change with age level, it was thought that presenting these data in an interesting form to children at the junior high school level would allow them to compare their own status in career planning with that of children at different grades. In Volume III there is further discussion of how such data can be employed to achieve objectives which fit into overall educational objectives as they have been classified in taxonomies of objectives for both the cognitive domain and the affective domain. An appendix to Volume III contains the basic curriculum data presented to the junior high school students, a teacher's guide, and evaluation sheets for a planned follow-on evaluation of the effects of this experimental curriculum.

Each of the above three areas of research was conducted with two aims in mind: (a) to make sufficient progress and to gather sufficient data to describe at this point in time the work that was accomplished under this exploratory project; the results of this work are reflected in the three volumes of this final report and in the appendix to Volume III; (b) to make a beginning in some areas of research which could be carried on further should the project be continued either in all of its exploratory phases or only in some of them.

A few months ago it was decided that the kinds of research reported in Volumes I, II, and III could best be carried on as separate projects since they are in some respects divergent efforts, though in implementation the results might be converged into one experimental

approach to vocational education. Therefore a proposal was prepared by the senior author of this Volume I proposing that the work in occupational information be carried on as an extension of the present project, and the author of Volume III submitted a separate proposal for a new project to continue the evaluation of the curriculum developed. No immediate follow-on work has been proposed for work begun and reported in Volume II of this final report, but the author of that volume has a long-term interest in utilization of the data obtained by the parent questionnaires in considering educational and attitude-changing techniques which could be used with parents to focus their influences more effectively as guidance agents in the career planning done by their children.

To date no official word has been received as to the acceptance of the two proposals mentioned in the preceding paragraph, so it has been necessary to prepare this final report as though no follow-on work would be conducted in any of these three research areas. Otherwise the authors of the various volumes might have preferred to delay reporting of progress to date in order to reach more definitive stages in exploring these three separate areas within the domain of vocational education. Due to these circumstances, however, it has been necessary to curtail some of the ongoing data gathering activities which might otherwise have led to more definitive results, in favor of reporting now the progress which has been made. While the authors of all three volumes regret curtailment in funds and other difficulties which are being currently experienced, it is the hope of all the authors that at a more opportune time the research activities described in this final report can be picked up and pursued as a part of the overall research effort to improve the educational system.

PRECEDING PAGE MISSING

Introduction to Volume I: Occupational Information

Problem

It has generally been conceded for years that any adequate approach to vocational education, particularly for the non-college bound student, must provide some means by which the student is enabled during his education and training to fit himself for a kind of job which will be appropriate for him and available in the future. The need for occupational information in an overall vocational guidance program appears too self-evident to require the citation of references. While no research apparently is needed to show that occupational information is a necessary part of a guidance program needed to help young people plan their careers, until fairly recently not much attention was directed toward improving the techniques for selecting and presenting the occupational information which a student needs. Furthermore, too little attention has been given as to better means for integrating occupational information into the total educational and guidance efforts which schools need to make to assist the student better in planning his vocational future.

Visits to libraries in high schools are usually sufficient to convince one that more down-to-earth information about occupations is needed, and that it needs to be presented in a more interesting and attractive format. In the absence of such improved materials, high school counselors often resort to use of documents prepared for other purposes. For example, in the absence of any other kind of information counselors and students often resort to official documents published by the Bureau of Labor Statistics and other governmental agencies. These documents are normally prepared for persons working in employment services and employment offices, or for persons who for various reasons need to keep track of statistical information about employment and unemployment. Such documents understandably are often couched in terms of official job descriptions and definitions which are adequate for communicating to the professional worker, but which are not adequate as occupational information for young people. Even if such documents did describe jobs adequately, they do not and are not intended to serve the guidance function of helping the student compare his own aptitudes and skills with the aptitudes and skills required by the job. Nevertheless, many school libraries contain only this kind of document which, in the hands of an experienced counselor working with an individual student, may indeed be very helpful. However, considering the counselor-student ratio in most high schools, a need is seen for documents which would be self-

explanatory to the student so that he could do some of his exploration and planning on his own, thus making better use of the time available in conferences with teachers, counselors, and parents.

This is not to say that there are no interesting and well-prepared materials available for use by the individual student. A great many helpful documents were found which were addressed either to the general theme of the place of the young person in the world of work or to an introduction to various fields of work within which a student might ultimately find the best entry level job from which his career progression could further be planned. In fact, many such documents ranging from a two-page folder to a book were reviewed during the course of work reported here as background for this research effort. These documents are listed in the references in this report. Nevertheless, even some of the best materials available fail to cover many of the topics a student needs to consider in making the best match between himself and available jobs. It was therefore the objective of the research reported here to make some initial steps toward improvement in selecting and developing types of information needed by students, as well as making improvements in the format in which such content might be presented.

In preparing the experimental occupational information described in this report, consideration was given to three working hypotheses which the authors felt should guide research in improved techniques for selecting and presenting occupational information. One hypothesis is that occupational information should be presented in such a way that the student is led to consider (a) himself and his interests, aptitudes, aspirations, and roles in life; (b) the job families into which his interests and abilities tend to incline him, and then more particularly the specific entry level job he might consider; (c) information about the training opportunities which could prepare him for either specific jobs or in the general skills required in job families in which he is interested; and (d) information concerning specific job opportunities, as well as information relating to automation, job obsolescence, and other modern trends. Second, it was hypothesized that this fourth type of information about job opportunities should be available to the student not only in the form of national trends but also in terms of local opportunities. For this reason a separate study was made of the San Francisco Bay Area in order to gather data on local job opportunities and training opportunities, which data we hoped would be more fully incorporated in the experimental occupational information when it could be further revised beyond the present contract period. Third, it was hypothesized that occupational information may be needed at three different

stages in the individual's development, as follows.

(1) Information is needed about the overall opportunities for men and for women to help the boy and the girl form realistic perceptions of the places each sex now has in the world of work and the places and roles which might be developed in the future. This information, it was thought, is the first kind of occupational information needed, perhaps at grades 5 through 9, to help students identify for his or her sex the kinds of roles, rewards, and influences which are now prevalent and which might be brought about in the future.

(2) The next stage at which occupational information is needed concerns a first brief appreciation on the part of the student for a wide range of job families which he might consider as a first step in later planning an actual entry job. It is recognized here that opinions differ as to whether non-college bound students should plan for a specific job at the outset, or whether they should acquire generalizable skills useful in a wide range of jobs, thus protecting them somewhat better against job obsolescence in the future.

(3) The third phase at which occupational information is needed is in the selection of the specific education or training program which would focus upon the particular entry job in which the student is interested.

Considering the above working hypotheses, it was decided that first draft occupational information materials would be prepared for one particular job or job family, and that after first tryouts of such materials it would be possible to specify improved ways of presenting the information for that job as well as identifying improved content and technique for presenting similar information about other jobs or other job families. Therefore it was necessary next to select some particular job toward which the first draft experimental materials would be directed. In the remainder of this report are described the procedures and results of this pilot activity to develop such information for one job.

Methods

In this section of the report activities are described which were undertaken to obtain general background information helpful for all of the research activities under this project as well as specific steps which were taken in connection with the study relating to occupational information. Stated differently, it was first believed necessary that the project staff gain information from general sources and from local schools as background information for the benefit of the project as a whole. Second, in preparation for choosing a particular job which would be the subject matter of the pilot study in occupational information, it was necessary to relate the job chosen to local training opportunities and job opportunities. The following paragraphs describe both the activities engaged in as general background for the project as a whole and activities leading up to the pilot study, the results of which are reported in the next section.

While some initial reading of background material was being done at the outset of the project, interviews were being conducted with personnel in high schools and in junior colleges in the two counties closely adjacent to Palo Alto. Interviews were conducted with guidance and vocational education personnel in the Palo Alto Unified School District, in the Sequoia Union High School District, in San Mateo Junior College, and in Foothill College. These schools are located in Santa Clara County and San Mateo County. A written summary of these interviews was prepared and was used as a working document by project staff members; this document was referred to frequently in arranging contacts with school personnel to work out classroom participation in the various studies. Since the report of these interviews was primarily a working document to be used in conducting the studies reported in the three volumes of the final report, it was not deemed necessary to prepare the document for outside distribution.

Just as it was desirable to establish local contacts with school personnel through the interviews described above, it was further deemed desirable to conduct a local study of job opportunities and training opportunities in the same two counties mentioned above. It was felt that information on these two topics, like the information from the interviews with school personnel, would be of continuing value not only during the present contract period but during any follow-on research which might be undertaken. The co-author of this Volume I took responsibility for gathering source documents which had previously been prepared by school personnel in these two counties and for interviewing school personnel and learning about documents

prepared elsewhere which would aid in the survey. As a result of this activity a second working document was prepared which, like the interview report, was frequently referred to by personnel working on all of the research activities of the project. The information in this report would be of particular value in the proposed extension of work in occupational information, particularly since the proposed next step was to broaden the number of occupational areas for which we would prepare experimental occupational information. The general impression derived from the data in this working paper was that both the employment picture and the training opportunity picture is very bright for young people who will invest the time to learn skills required for available jobs. The economic fields which were projected to require the largest work force were manufacturing, services, and retail and wholesale trade; but work also is forecast to be available in communications, transportation, utilities, construction, finance, insurance and real estate, and even in agriculture, although not traditional areas. Economic forecasts see finance, insurance and real estate as the fastest growing occupational area although its absolute size is not so great. In agriculture, the need will be for horticulturists, landscape architects, and gardeners, nurserymen, etc., to serve the esthetic rather than the material needs of an urban population. Summary tables contained in the working document present in quantitative form the extent to which training opportunities are available locally to match the identified job opportunities. While the information in this working paper was used partly to help choose the job for which occupational information would be presented in the pilot study reported here, due to the broad scope of this survey its greatest usefulness would have been in the proposed follow-on work. As was the case for the interview reports, there appeared no need to provide for external circulation of this report, as useful as it would be for continued research having anchor points in local labor statistics.

The remaining activities described in this section of the report were undertaken specifically in connection with the pilot study concerning occupational information. Using information summarized in the preceding paragraphs, the decision was made to select the job of secretary as the subject matter for the pilot study in occupational information. This is a job for which there are many employment opportunities as well as training opportunities, not only in this geographical area but also nationwide. Also, local high schools conduct instruction in preparation for the job of secretary, making it more realistic to ask for classroom tryouts of the prototype material.

The next activity consisted of completing the review of available literature concerning other ongoing research in occupational information.

In this connection a visit was made to Project VIEW in San Diego to learn how audiovisual devices are being used there with job information content in a standard form over a wide range of job areas. A meeting was also held with Dr. Ann Martin of the University of Pittsburgh to exchange information on current research relating to occupational information. Since this visit occurred at the time that both projects were being proposed for continuation, efforts were also made to obtain advance coordination on specific work to be undertaken. During this visit it was recognized that the future plans for the present project of AIR involved applications of a taxonomy of tasks in selecting the media in which future experimental efforts would be conducted. As a parallel activity, Dr. Martin was planning to utilize a taxonomy of person characteristics in choosing the media in which occupational information would be presented. Had it been possible to carry on both projects in the future, it is conceivable that joint work could have resulted in development of the theoretically ideal taxonomy which would consider both person variables and task variables in selecting the media and materials to be presented.

The final preparatory step before writing draft materials consisted of a library search for other documents which had been prepared for the assistance of girls who were considering secretarial work as a career. A content analysis was made of a number of such documents, which are listed in the references. This content analysis enabled the project personnel to decide which types of information presented in other documents should be retained, which should be eliminated, and which categories of new information should be added.

Next, a first draft of three booklets was written, each booklet corresponding to the content recommended in the three stages named in one of the hypotheses stated in the introduction to this report. Thus, the first booklet dealt in general with women's place in the world of work, showing employment trends relating to urbanization of population, increase in education of women, and the ratio of women to men holding advanced degrees. The implications of such trends were discussed in the light of training limitations which have a restrictive effect upon the range of jobs women hold, as well as considerations of unnecessary stereotypes as to types of jobs which are proper for men and for women. The second booklet in the series covered the general area of the job family called "office workers," showing which jobs could be entry level jobs, given appropriate qualifications, and showing how job progression and career development may be accomplished within the office occupations area. The third booklet in the series dealt specifically with the job of secretary, and gave special attention to the day-to-day working

relationships between the secretary and the employer, and the role of the secretary as it is determined by the secretary and the employer.

Listed below is a topical outline giving some more detail concerning the content of the three booklets.

Booklet I: Women's Place in Today's World of Work

- Population shift to cities and employment implications
- Where women work and how this is changing
- The dual role of child-rearing and job-holding
- Changing education needs of women
- The ages in life at which women typically work
- Age-of-marriage trends
- Relation of woman's education to husband's earning power
- Education and ease of finding jobs
- The need to work and the desire to work
- The career woman, married and unmarried
- Sex stereotypes and prejudices in education and hiring of women
- Overcoming stereotypes and prejudices
- The abilities of men and women
- Typical patterns in school, marriage, and employment
- The professions, business, and technology
- Percentage of women earning Ph.D. degrees
- How your counselor can help

Booklet II: Entry Jobs Leading to the Position of "Secretary"

- Thinking about your career
- Two definitions of "secretary"
- Entry office jobs
- Stenographers and clerk-typists
- Basic skills; grades
- Some job descriptions
- Working with others
- How much pay?
- How much "mobility" do you need?
- Matching you with the first job
- What you can do if your skills are weak

Booklet III: What It's Like to be a Secretary

- Good reasons for being a secretary; other reasons
- Marriage and jobs
- A career or a stepping stone?

Drifters and planners
Deciding upon acceptable and unacceptable consequences
How do you match the "job image"?
The achievement motive
The starring role and the supporting role
Professionalism in the job: Some case histories
Being indispensable
Responsibility and initiative
Personal characteristics and work methods of secretaries
Dependability and courtesy
Tact, speed, and accuracy
Keeping confidences
Training and job opportunities
Career progression
How to find a job
Pay, benefits, working conditions
Some do's and don't's about changing jobs

Preparing First Draft Materials

The first draft of the three booklets containing the content outlined above was then written and a test covering the content of each chapter was prepared. The first draft booklets were reviewed by several project staff members, and the tests were taken by several experienced secretaries. Next, during the summer of 1966 three students were brought into the AIR offices; they read the three draft booklets and took the test over the content. The students were also interviewed to obtain their reactions, comments, and suggestions concerning the three booklets. Based on this information, including the students' test performance, a second draft was then planned.

Second Draft Materials

A revised test was first developed to match better the content of the second draft materials and to reduce test-taking time by providing for shorter answers from the students. In this second draft some rearrangement of topics was made among the three booklets in order to more closely distinguish the three kinds of content, namely (a) women's place in the world of work, (b) entry office jobs, and (c) the secretarial job. The second draft was also prepared in such a way as to require a written response of the student to questions after several brief pages of reading material. The pages of reading material within the booklets were arranged much like "frames" in a programed instruction sequence. Many pages were only a paragraph in length, and at most not more than a half-sheet since the booklets were

bound in half-sheet size. Responses required of the student were primarily in multiple-choice form, but this does not imply that the questions were only in relation to factual materials. In responding to many of the questions the student was required to think about herself and her interests and skills as well as personality traits in answering questions as to how well she matches the job. While there was no intent to require as frequent responding as in small-step, linear programed instruction sequences, it was hoped that the frequency of responding which was used would keep the students working more actively, and of course the record of the responses would be useful in future revisions of the materials.

Recommendations for Continued Work

It was at the point of progress described immediately above that the unexpected information was received to the effect that the project could not be continued beyond 30 November. This meant that there was not sufficient time to plan an adequate evaluation of these second draft materials, nor was there time to make any of the other improvements over these or other materials which were outlined and recommended in the proposal for continuation of the project. Under these circumstances the remaining topic to be covered is simply an outline of recommended steps which should be taken to evaluate and improve the present materials as a means for providing guidelines for similar materials which might be developed in other career fields.

Procedures for Evaluating the Existing Materials

It is recommended that there are two main steps to be taken in any future evaluation of the three second draft chapters which were developed. The first step is to determine at what grade level the materials might best be used and to determine how they should be used in the context of the program of the school. The recommendation is that Chapter I of the materials be utilized from grades 7 to 9, and that Chapters II and III be used at grade 10 on a voluntary basis for students who express at least some interest in preparing to become secretaries. It is further recommended that these materials for the indicated kind of student might be used under any one of the following circumstances:

(1) As an integral part of an existing course such as Typing I;

(2) As homework to be coordinated with some existing course;

(3) As preparation materials to be covered by the student before he arranges conferences with the guidance counselor; and

(4) As a special out-of-hours optional activity for interested students.

Concerning the second step, namely the evaluation of the materials used under one or more of the circumstances mentioned above, the following possibilities are outlined.

(1) After the materials are read by the students and discussed with teachers and guidance counselors, the opinions of the students and the other persons could be obtained as to the usefulness of the

materials and ways in which they might be improved.

(2) Having some interested students read Chapter I and II and then making optional their reading of Chapter III might be an empirical indication of the value the students believe to exist in the first two chapters.

(3) A test over the content could be administered as a pre-test and a post-test as an indicator of how understandable the materials are and how well the information is retained.

(4) A record could be kept of any increase in the number of interviews sought with teachers or guidance counselors after students read the three chapters.

(5) Other behavioral changes could be noted after reading of the chapters, such as enrolling in additional training, asking for catalogs giving training and job information, or making plans to visit places of employment.

(6) Students could be asked to submit a written plan outlining their thinking about their careers both before they read the chapters and after reading them. Any changes in the appropriateness of the plans on the second occasion might be taken as a measure of the practical value of the materials for planning purposes.

(7) Notes could be kept for a group of students who have read the chapters and a group of students who have not, which would show any changes in curriculum and enrollment plans as a measure of effectiveness of the materials.

(8) Progress in secretarial-related skill courses might be compared for students who have read the materials and students who have not.

(9) The number of requests to teachers and guidance counselors for additional occupational information could be tallied for a group which read the materials and a group which did not.

(10) Any changes in the overall motivation of the student to make progress in planning his future might be noted for an experimental group and a control group.

Recommendations for Additional Research

Once the second draft materials could be evaluated in accordance with the above recommendations, data would then exist suggesting the directions for needed future work. For example, an item analysis of the post-test scores could indicate which portions of the booklets should be re-written and improved. Also, the responses students make in answer to questions posed to them in the booklets would provide a second source of data for empirical revision of the materials. Soliciting comments from students about their reactions to the materials might help indicate whether the materials work well as they are, whether they should be re-written, or whether the same information should be presented in audiovisual form or some other non-printed format. The proposal previously submitted for the continuation of the project includes much more detail as to possible ways of improving occupational information for the job of secretary as well as for other career fields. Since that is the case, it is unnecessary to repeat those recommendations here.

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